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**Title:** The role of general practice in reducing unplanned hospital admissions

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**Abstract**

Rising unplanned admissions are a key issue facing the NHS. In this article we investigate what is currently being done within primary care to reduce these, and what more could be done in the future. In particular, we highlight the scope for improvements and the current initiatives aiming to achieve this. We explore which practice characteristics are most important in reducing admissions, and how these might be emphasised in the future. Finally, we summarise research exploring the effectiveness of admission avoidance interventions, and highlight areas where current policy appears to be misaligned with evidence.

## **Short Introduction**

General practitioners play a central role on the unplanned admission pathway. This review describes current admission avoidance initiatives within primary care, explores the scope for improvements, and highlights which interventions could be employed most effectively in the future.

## **Key points**

- Although only 18% of all unplanned hospital admissions originate from primary care, GPs can reduce hospital demand through high quality disease management and treating acutely unwell patients in a timely manner.
- There are substantial differences in adjusted unplanned admission rates between general practices, suggesting improvements are possible.
- Practices with better relational continuity tend to have lower admission rates, however there is little evidence of an association with appointment availability.
- Recent changes to the Quality and Outcome Framework have financially incentivised general practitioners to review unplanned admissions for their patients and, latterly, case-manage those at very high risk of admission.
- There is good quality evidence that support for self-management and improved multi-disciplinary working could lead to reduced admissions. Consultant advice lines and community outreach by hospital specialists have shown promising results in some areas.
- There is little evidence that other interventions, including case-management and specialist clinics, are effective in reducing hospital demand.
- Hospital doctors can release up to 4.5% of GP resources by addressing variable discharge and communication quality.
- Current policy is somewhat misaligned with evidence; commissioners should work with researchers to ensure that effective interventions are quickly disseminated.

**Keywords:** Primary Health Care, General Practice, Ambulatory care, Patient Admission

## **Introduction**

Unplanned or emergency admissions cost £12.5 billion annually and account for 67% of bed days within NHS hospitals.(Department of Health, 2013) Despite several mechanisms financially penalising hospitals for high unplanned admission rates (including the marginal rate, short-stay and readmission tariffs), they have increased by 47% over the last 15 years. The reasons for this are manifold, but include factors working within the hospital, such as four hour emergency department targets and new working practices (e.g. clinical decision units), and those outside the hospital, such as changing demographics and fragmented out-of-hours care.

GPs play a central role in the unplanned care pathway. Although only 18% of all unplanned admissions originate with a GP referral (down from 29% ten years previously), they can reduce demand for self-referrals through high-quality disease management, providing timely treatment to acutely unwell patients, and appropriately signposting out-of-hours services. Evidence of wide practice-level variation in each of these crucial aspects of primary care suggests that improvements may be possible, which could translate to lower admissions. In this paper we discuss what is currently being done in primary care to reduce unplanned admissions, and how these efforts might be built on in the future. We primarily focus on admissions for ambulatory care sensitive conditions (ACSCs), which make up 20% of all unplanned admissions and are more likely to be preventable by GPs (Box 1).(Purdy et al, 2009)

## **The current state of play**

The quality and outcome framework (QOF) was introduced in 2004 and is the largest pay-for-performance scheme in the world, costing £1 billion annually. It rewards GPs for providing high-quality care across 77 indicators which should improve population health, particularly among those with long-term conditions, and reduce the need for unplanned hospital admission. However, despite several studies, there is little compelling evidence of lower admission rates among higher-performing practices.(Huntley et al, 2014)

Recent changes to the QOF have focused on reducing unplanned admission rates more directly. In 2013/14 three indicators were added to reward practices for reviewing their unplanned admissions, engaging in benchmarking and peer-review with local GPs, and developing new care pathways to reduce unplanned admissions. In 2014/15 this funding was transferred to an enhanced service, worth £20,400 to an average-sized practice (£162 million nationally), requiring GPs to case manage the 2%

of patients deemed at highest risk of unplanned admission by, for example, offering same-day telephone consultations or co-ordinating care after hospital discharge.

### **Opportunities for reductions**

Recent work has demonstrated substantial differences in ACSC admission rates between general practices located in similar areas, even and after adjustment for age, sex, deprivation, chronic disease prevalence and A&E department proximity.(Busby et al, 2016) Some practices had overall ACSC admission rates 55% higher than others, with differences in excess of 150% found for several conditions including schizophrenia, diabetes and COPD. These large disparities offers hope that efforts to standardise and improve primary care could lead to substantially reduced admissions in some areas. Such large variations between practices are not limited to the NHS, an international systematic review reported that geographic variation in unplanned ACSC admission rates were “almost ubiquitous”.(Busby et al, 2015)

### **What do low-admission practices look like?**

Several ecological studies have investigated the association between practice characteristics and unplanned ACSC admission rates.(Huntley et al, 2014) Improved relational continuity of primary care, whereby a patient consults repeatedly with the same GP and builds a therapeutic relationship, is consistently associated with lower admissions. Surprisingly, there is little UK-based evidence that practices with better appointment availability have lower admission rates. This is particularly important as the government forges ahead with costly initiatives to increase practice opening times. Early results from pilot areas suggest these changes have led to a moderate decrease A&E attendances, but not admissions.(NHS England, 2016) Some CCGs have already deemed the scheme as ineffective, and abandoned it altogether. There is inconsistent evidence that better quality disease processes (e.g. using spirometry for asthma diagnosis) can lead to lower unplanned admission rates, however some studies have reported reduced rates among practices with higher patient satisfaction.(Huntley et al, 2014)

### **How can GPs reduce admissions?**

It appears that improved continuity of primary care could reduce admissions, however achieving this is difficult due to an increasing emphasis on improving access and ongoing GP recruitment issues. Improved patient education, use of practice information systems, and practitioner communication could result in higher continuity, however studies are yet to explore the aggregate effect of these interventions on costs and outcomes. The QOF offers the most obvious method to modify GP

behaviour, however there is growing disenchantment with the programme in England, and it has already been dismantled in Scotland in favour of its own scheme based on local 'quality clusters'.(Roland and Guthrie, 2016)

Efforts to amend the QOF, and place an increased emphasis on admission avoidance interventions within primary care, could be undermined by a lack of good-quality evidence on which interventions are effective. Although it appears that support for self-management can reduce admissions for patients with some long-term conditions (e.g. COPD, heart failure), there is little evidence that other primary-care led interventions, such as case-management and medication reviews, are effective.(Purdy et al, 2012) Nevertheless, many commissioning organisations have forged ahead with largely non-evidence based GP-led admission avoidance interventions. For example, South Gloucestershire CCG has recently introduced a practice-based minor injuries service while Slough CCG have aligned each care home with a single GP practice.(NHS Rightcare, 2016)

### **The role of hospital doctors**

Increased joint working between specialists and GPs is often cited as a key mechanism to reduce admissions, however there is limited information on the cost-effectiveness of interventions to achieve this. Hospital doctors can undoubtedly release GP resources for extra admission avoidance activity by addressing variable discharge and communication quality. Around 4.5% of GP appointments have been attributed to this unnecessary hospital demand, which could be reduced through improved discharge summaries, direct onward referral and supplying all necessary medication upon discharge. Some trusts have used consultant advice lines, which allow GPs to seek specialist guidance on the need for hospital referral, to successfully reduce hospital activity. Outreach by specialists into the community can lead to benefits if it is focussed on disadvantaged populations, and is part of a multifaceted intervention embedded within primary care. Studies of multi-disciplinary teams have also shown promising results, particularly for heart failure and COPD.(Damery et al, 2016) There is little evidence that the use of other integrated care interventions, including collaborative case management and specialist disease clinics, can lead to reduced admissions.

### **Conclusions**

The causes of unplanned hospital admissions are complex meaning that substantial reductions will require action across primary, secondary, community and social care. The status quo of financial penalties falling almost entirely on hospital trusts appears inequitable; more should be done to balance incentives across all the organisations that play an important role on the pathway to

admission. Recently, there have been some tentative moves towards this. However these may prove to be misguided, as there is little evidence that case management or improved primary care access can lead to lower admissions. An increased emphasis on the continuity of primary care and improved multi-disciplinary team working might prove more fruitful. Some areas have introduced local schemes, such as primary care led minor injuries units and consultant advice lines. It is crucial that commissioners work with researchers, through NIHR CLAHRCs and other schemes, to robustly evaluate these interventions and ensure that effective strategies are quickly disseminated throughout the NHS.



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**Box 1: List of ambulatory care sensitive conditions**

<b>Commonly used in NHS (n=19)</b>	<b>Used in other countries (n=17)</b>
Angina	Alcohol-related diseases
Asthma	Atrial fibrillation and flutter
Cellulitis	Constipation
Congestive heart failure	Deliberate self-harm
Convulsions and epilepsy	Dyspepsia and other stomach function disorders
Chronic obstructive pulmonary disease	Failure to thrive
Dehydration and gastroenteritis	Fractured proximal femur
Dental Conditions	Hypokalemia
Diabetes complications	Low birth weight
Ear, nose and throat infections	Migraine / acute headache
Gangrene	Neuroses
Hypertension	Peripheral vascular disease
Influenza and pneumonia	Ruptured appendix
Iron-deficiency anaemia	Schizophrenia
Nutritional deficiency	Senility / dementia
Other vaccine-preventable diseases	Stroke
Pelvic inflammatory disease	Tuberculosis
Perforated / bleeding ulcer	
Pyelonephritis	